WHAT IS CLAIMED IS:

1. A refractive power measurement apparatus comprising:

a projection optical system which projects measurement light onto an optical system to be measured;

a photo-receiving optical system provided with a photodetector which photo-receives the measurement light from the optical system to be measured and a lens system which guides the measurement light onto the photodetector;

moving means for moving the lens system within a plane intersecting at right angles with an optical axis of the photo-receiving optical system so as to form a predetermined measurement pattern image on a photo-receiving surface of the photodetector; and

calculation means for calculating a refractive power of the optical system to be measured based on the measurement pattern image.

2. The refractive power measurement apparatus according to claim 1, wherein the moving means moves the lens system so as to form, as the predetermined measurement pattern image, a measurement pattern image which enables obtaining at least three meridians passing the optical axis of the photo-receiving optical system or a measurement pattern image which enables obtaining a refractive power of the optical system to be measured by shape variation.

3. The refractive power measurement apparatus according to claim 1, wherein:

the lens system is arranged at a position deviated from the optical axis of the photo-receiving optical system; and

the moving means includes rotation means for rotating the lens system about the optical axis of the photo-receiving optical system.

4. The refractive power measurement apparatus according to claim 3, wherein the rotation means rotates the lens system at least once within a photo-receiving time of the photodetector so as to form a ring-shaped measurement pattern image.

5. The refractive power measurement apparatus according to claim 4, wherein the photo-receiving time of the photodetector is variable.

6. The refractive power measurement apparatus according to claim 3, wherein the lens system is arranged at a plurality of positions, respectively, each of the plurality of positions being placed at a same distance from the optical axis of the photo-receiving optical system.

7. The refractive power measurement apparatus according to claim 3, wherein the lens system is arranged at a plurality of positions, respectively, each of the plurality of positions being placed at a different distance from the optical axis of the photo-receiving

optical system.

8. The refractive power measurement apparatus according to claim 3, further comprising:

detecting means for detecting an rotation angle of the lens system; and

control means for controlling projection of the measurement light based on a result of detection obtained by the detecting means.

9. The refractive power measurement apparatus according to claim 1, including an eye refractive power measurement apparatus for measuring a refractive power of an eye to be measured, wherein:

the projection optical system includes an optical system which projects spot-shaped measurement light onto a fundus via a central portion of a pupil of the eye,

the lens system is arranged at a position conjugate with a position of the pupil, and

the moving means moves the lens system so as to derive reflection light from the fundus through the periphery of the pupil.

10. The refractive power measurement apparatus according to claim 1, including a lens meter for measuring a refractive power of a lens to be measured, wherein:

the projection optical system includes an optical system which projects measurement light onto the lens, and

the photodetector and the lens system in the

photo-receiving optical system are arranged at a position on a transmitting side of the measurement light through the lens.

11. A refractive power measurement apparatus for measuring a refractive power of an eye to be measured, the apparatus comprising:

a projection optical system which projects spot-shaped measurement light onto a fundus via a central portion of a pupil of the eye;

a photo-receiving optical system provided with a photodetector which photo-receives the measurement light from the fundus and a lens system which guides the measurement light onto the photodetector;

moving means for moving the lens system within a plane intersecting at right angles with an optical axis of the photo-receiving optical system so as to form a predetermined measurement pattern image on a photo-receiving surface of the photodetector; and

calculation means for calculating the refractive power of the eye based on the measurement pattern image,

wherein the lens system is arranged at a position conjugate with a position of the pupil, and the photodetector is arranged in the vicinity of a focal point of the lens system.

12. The refractive power measurement apparatus according to claim 11, wherein:

the lens system is arranged at a position deviated

from the optical axis of the photo-receiving optical system, and

the moving means includes rotation means for rotating the lens system about the optical axis of the photo-receiving optical system.

13. A refractive power measurement apparatus for measuring a refractive power of a lens to be measured, the apparatus comprising:

a projection optical system which projects measurement light onto the lens;

a photo-receiving optical system provided with a photodetector which photo-receives the measurement light passed through the lens and a lens system which guides the measurement light onto the photodetector;

moving means for moving the lens system within a plane intersecting at right angles with an optical axis of the photo-receiving optical system so as to form a predetermined measurement pattern image on a photo-receiving surface of the photodetector; and

calculation means for calculating the refractive power of the lens based on the measurement pattern image,

wherein the lens system is arranged between the lens and the photodetector, and the photodetector is arranged in the vicinity of a focal point of the lens system.

14. The refractive power measurement apparatus according to claim 13, wherein,

the lens system is arranged at a position deviated

from the optical axis of the photo-receiving optical system, and

the moving means includes rotation means for rotating the lens system about the optical axis of the photo-receiving optical system.